

CLAIM SET AS AMENDED

1. (currently amended) An optical source device comprising:

a lamp;

a beam shaping optical system including a light uniforming element for uniforming a light intensity distribution in a plane perpendicular to the direction of propagation of the received emitting light of the lamp:

an optical deflector having a plurality of adjustable mirror elements for changeably reflecting the received emitting light of the beam shaping optical system in either a first direction or a second direction; and

an optical reflector for reflecting the deflected light from the optical deflector along an axis of said second direction substantially back towards the optical deflector and substantially towards the lamp,

wherein axes of the first direction and the second direction are different than an axis of the emitting light emitted from the lamp.

2. (previously presented) An optical source device comprising:

a lamp;

a beam shaping optical system including a light uniforming

element for uniforming a light intensity distribution in a plane perpendicular to the direction of propagation of the received emitting light of the lamp:

an optical deflector for changeably reflecting the received emitting light of the beam shaping optical system in either a first direction or a second direction; and

an optical reflector for reflecting light reflected in said second direction, along an axis of said second direction,

wherein the optical reflector has a polarization converting element for aligning the polarization direction of the light entering the optical reflector, a liquid shutter element for receiving the transmitted light of the polarization converting element, and a mirror for reflecting the transmitted light of the liquid crystal shutter element.

3. (canceled)

4. (currently amended) ~~The~~ An optical source device as claimed in claim 1, ~~further~~ comprising:

a lamp;
a beam shaping optical system including a light uniforming
element for uniforming a light intensity distribution in a plane
perpendicular to the direction of propagation of the received
emitting light of the lamp:

an optical deflector having a plurality of adjustable mirror elements for changeably reflecting the received emitting light of the beam shaping optical system in either a first direction or a second direction;

an optical reflector for reflecting the deflected light from the optical deflector along an axis of said second direction substantially back towards the optical deflector and substantially towards the lamp;

an average ON ratio calculating unit for calculating an average ratio of an ON state of light projected on a display screen during a predetermined period; and

a control unit for controlling respective driving states of the lamp, the optical deflector, and the optical reflector, based on the ratio of the ON state of the light outputted by the average ON ratio calculating unit.

5. (previously presented) The optical source device as claimed in claim 4, further comprising an optical sensor whose output signal is inputted into the control unit.

6. (previously presented) The optical source device as claimed in claim 4, wherein the control unit compares a predetermined value with the calculated average ON ratio and controls the quantity of light reflected by the optical reflector based on the comparison.

7. (previously presented) The optical source device as claimed in claim 6, wherein the predetermined value corresponds with a luminance value of the display screen.

8. (previously presented) A optical source device comprising:

 a lamp for emitting white light;
 a beam shaping optical system including a light uniforming element for receiving the emitting light of the lamp and uniforming the intensity distribution of the emitting light in a plane perpendicular to the direction of propagation of the emitting light of the lamp;

 a color separating element for separating the emitting light of the beam shaping optical system into a plurality of colors;
 optical deflectors provided respectively for the plurality of colors to changeably reflect the emitting light of the color separating element in either a first direction or a second direction, each optical deflector having a plurality of adjustable mirror elements; and

 optical reflectors provided for the respective optical deflectors to reflect the deflected light in said second direction substantially back towards their respective optical deflectors and substantially towards the color separating element.

9. (previously presented) The optical source device as claimed in claim 8, further comprising:

an average ON ratio calculating unit for calculating the average ratios of ON states of the light of a display screen during a predetermined period for each of the plurality of colors; and

a control unit for controlling respective driving states of the lamp, the optical deflectors and the optical reflectors based on the ratios of the ON state of light of the plurality of colors outputted by the average ON ratio calculating unit.

10. (previously presented) The optical source device as claimed in claim 9, further comprising optical sensors for the plurality of colors whose respective output signals are inputted into the control unit.

11. (previously presented) An optical source device comprising:

a lamp for emitting white light;

a beam shaping optical system including a light uniforming element for receiving the emitting light of the lamp and uniforming the intensity distribution of the emitting light in a plane perpendicular to the direction of propagation of the emitting light of the lamp;

a color separating element for separating the emitting light of the beam shaping optical system into a plurality of colors;

optical deflectors provided for a plurality of colors to changeably reflect the emitting light of the color separating element in either a first direction or a second direction;

optical reflectors provided for the respective optical deflectors to reflect the light reflected in said second direction, along an axis of said second direction; and

optical sensors for the plurality of colors whose respective output signals are inputted into a control unit,

wherein the control unit calculates increase rates of the plurality of colors, and compares the calculated increase rates of the plurality of colors with a previously set value, and in the case where the increase rates of the respective colors are less than the previously set value, it controls the amount of reflecting light of each optical reflector so that the increase rate of each optical reflector is the minimum value of the increase rates of the respective colors and, in the case where the increase rates of the respective colors are equal to or more than the previously set value, it controls the amount of reflecting light of each optical reflector so that the increase rate of each optical reflector is the previously set value.

12. (previously presented) The optical source device as claimed in claim 11, wherein the previously set value is changed based on a luminance value of the display screen.

13. (previously presented) The optical source device as claimed in claim 11, wherein the amount of reflecting light of each of the optical reflectors is controlled for each of the plurality of colors.

14. (previously presented) A projection television comprising the optical source device in any one of the claims 1 to 13.

15. (currently amended) An optical source comprising:

a lamp;

a beam shaping optical system including a light uniforming element for uniforming a light intensity distribution in a plane perpendicular to the direction of propagation of the received emitting light of the lamp;

an optical deflector for changeably reflecting the received emitting light of the beam shaping optical system in either a first direction or a second direction; and

an optical reflector for reflecting the deflected light from the optical deflector along an axis of said second direction substantially back towards the optical deflector and substantially towards the lamp,

wherein axes of the first direction and the second direction are different than an axis of the emitting light emitted from the

lamp.

16. (previously presented) The optical source device according to claim 15, wherein the optical reflector reflects the deflected light in order to be utilized as an incident light again.

17. (previously presented) The optical source device according to claim 15, wherein the optical deflector reflects the received emitting light in a first direction when the optical deflector is in a first position and wherein the optical deflector reflects the received emitting light in a second direction when the optical deflector is in a second position.

18. (previously presented) A method for projecting light onto a projection screen, the method comprising:

receiving a light beam;

shaping a diameter of the light beam by a beam shaper;

directing the shaped light beam to a projection screen and a reflector assembly by an optical deflector having a plurality of independently adjustable mirror elements, the light beam being directed to the projection screen during a first position of the mirror elements and the light beam being directed to the reflector assembly during a second position of the mirror elements;

selectively controlling an amount of light being directed

towards a mirror that is provided in the reflector assembly by a shutter element; and

reflecting the controlled amount of light from the mirror substantially back towards the optical deflector.

19. (previously presented) An optical source comprising:

a lamp;

a beam shaping optical system including a light uniforming element for uniforming a light intensity distribution in a plane perpendicular to the direction of propagation of the received emitting light of the lamp;

an optical deflector for changeably reflecting the received emitting light of the beam shaping optical system in either a first direction or a second direction; and

an optical reflector for reflecting the deflected light from the optical deflector along an axis of said second direction substantially back towards the optical deflector and substantially towards the lamp,

wherein the optical reflector includes a converter for converting a light intensity of the deflected light before reflecting the deflected light.

20. (previously presented) The optical source device according to claim 19, wherein the optical reflector comprises a deflector for

changeably reflecting the incident light in two directions, the light reflected in one direction of the two directions being reflected in the direction of the incident light.

21. (previously presented) The optical source device according to claim 19, wherein the converter comprises a polarization converting element for aligning the polarization direction of the light entering the optical reflector and a liquid shutter element for receiving the transmitted light of the polarization converting element.